# Supporting Information

# Single Crystalline Porous Hematite Nanorods: Photocatalytic and Magnetic Properties

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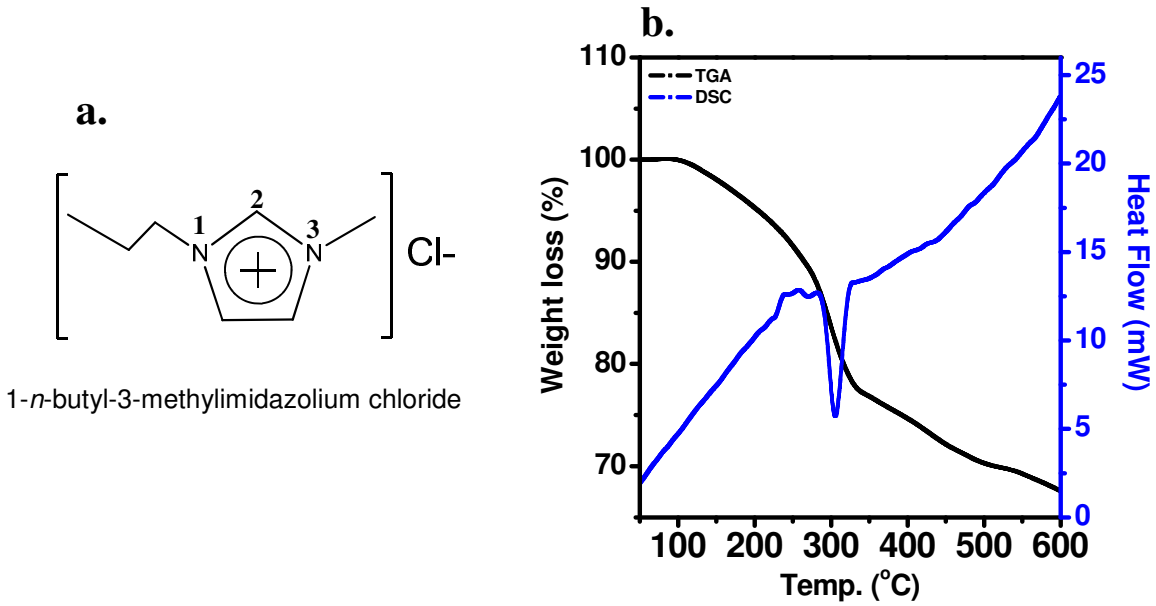
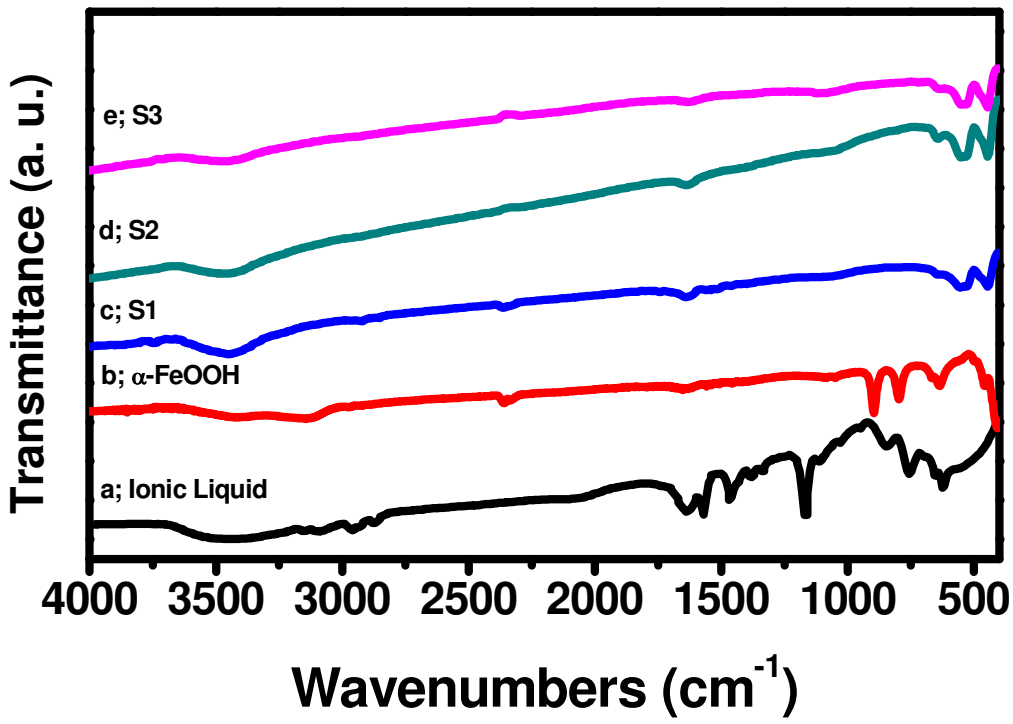



**Figure S1.** Chemical structure of [BMIM][Cl] ionic liquid (a) and TGA-DSC curve (b) of as-obtained α-FeOOH nanorods.

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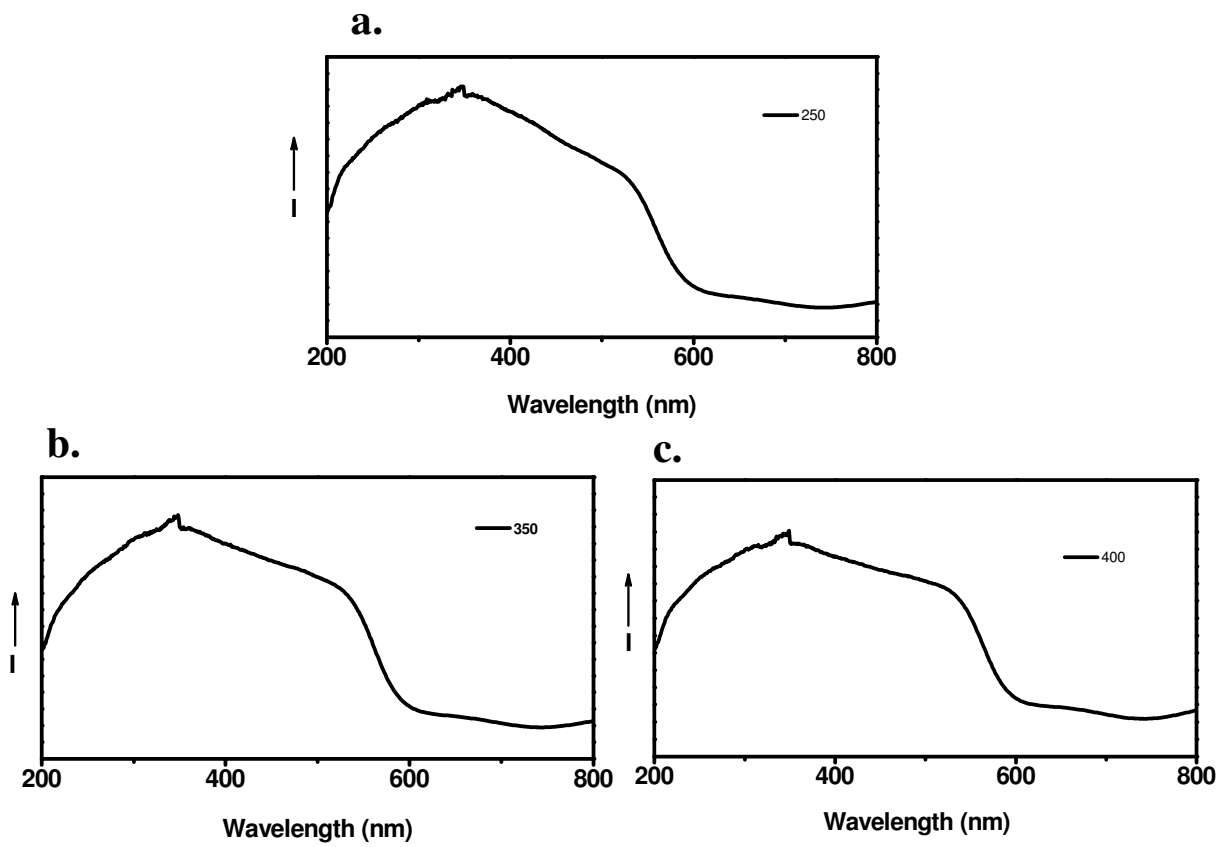


**Figure S3.** Diffuse-reflectance UV-vis spectra of as-obtained samples (S1-S3).

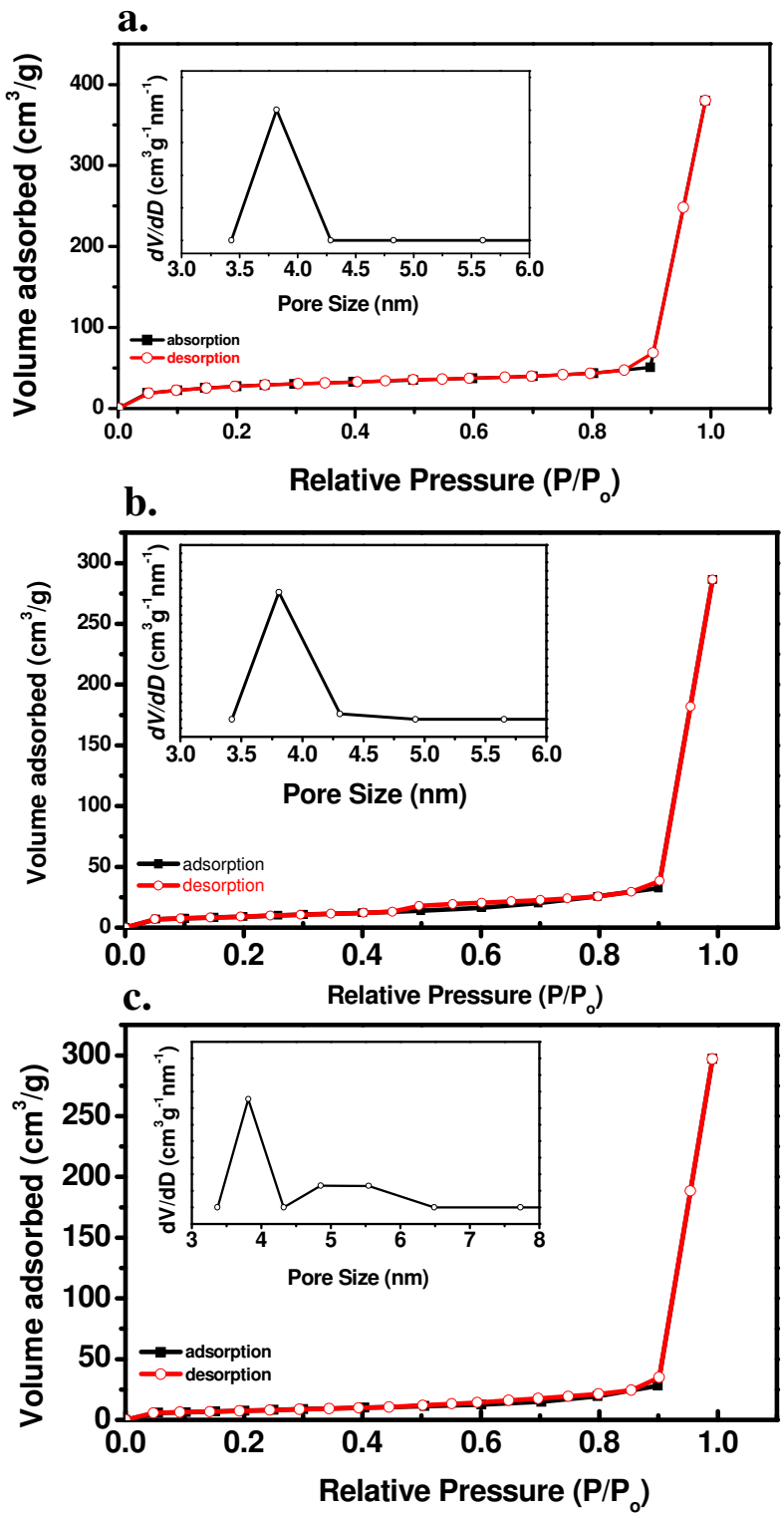


**Figure S4.** $N_2$ adsorption-desorption isotherm of the obtained α-$Fe_2O_3$ porous nanorods by different calcined temperature, such as 250 °C (S1), 350 °C (S2), 400 °C (S3) for 3 h in air atmosphere. Inset are pore-size distribution curve obtained from the desorption data.